

Application Serial No. 10/519,249  
Reply to Office Action of September 21, 2005

PATENT  
Docket: CU-4032

### **REMARKS/ARGUMENTS**

The shortened statutory period for filing a response to the Office Action mailed September 21, 2005 ended on December 21, 2005. An amendment was filed on December 12, 2005 by fax.

A petition and fee to extend by one month, the time for filing a response is enclosed in order to have this amendment entered and considered by the Examiner.

In the Office Action, the drawings were objected to as being too dark.

New FIGS. 1-9 were submitted on December 12, 2005 on five replacement sheets.

The Abstract was objected to as being in excess of 150 words. A new Abstract was provided in the December 12<sup>th</sup> amendment that is believe to be in proper form and well-within the 150 word limit.

Claims 3 and 7 were alleged to be substantial duplicates. Claim 7 as amended in the December 12<sup>th</sup> amendment was amended to encompass subject matter that is distinctly different from that recited in claim 3.

Claims 1-7 were rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of U.S. patent 6,526,192, EP 0 851 247 and U.S. patent 5,283,846.

Paraphrased, claim 1 as amended recites a fiber optic cable, the cladding of which is reduced in diameter over a limited length of the cable. New claim 8 defines the preferred embodiment of the reduced-diameter cladding.

After reviewing the references cited by the Examiner, none of them disclose an optical fiber having a cladding section that is reduced. The Applicant therefore submits that claim 1 as amended avoids the prior art. New claim 8 recites the preferred size of

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the reduced cladding section.

Support for the limitations added to claim 1 and for new claim 8 can be found on pages 14 and 15 of the specification as well as the figures. No new matter has been added.

The Examiner will note too that the dependent claims have been amended to delete the "characterized" terminology and to thereby conform them to U.S. claim style. The Applicant submits that such a revision is not a surrender of claim scope under *Festo*. If the Examiner contends otherwise, he is asked to explain how and why such amendments narrow claim scope.

By *this* amendment, "new" claims 9 through 16 have been "added" however, these "new" claims are in fact exact copies of original claims 1-7, with two exceptions: 1) they have been amended to remove the "characterizing" language and 2) the word "fibre" has been replaced with the word "fiber."

The Applicant believes that new claims 9- 16 are allowable over the art cited by the Examiner in the Office action for the reasons set forth hereinafter.

The devices described in U.S. patent 6,526,192 and in the paper of D.P. Hand are similar but a comparison of the devices in the two reference reveals that both of them have the same drawbacks. One drawback of the prior art device is that the optical core parameters are changed in the device, which can result in additional signal losses and distortion of useful signal, e.g., due to partial reflection. Another drawback is that as power increases, radiation intensity increases in the optical fiber core, including the waist region, leading to uninterrupted passage of the optical discharge wave through the

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waist region. Thus, the device loses its efficiency when radiation power increases.


Contrary to the Maroney and Hand references, the Applicants device claimed in new claims 9-16 provides the following property: the higher the laser radiation power, the greater is the pressure and temperature in the optical discharge plasma and the faster the optical fiber will be distorted and the optical discharge wave arrested. Thus, with increased laser radiation power, the reliability of the device of claims 9-16 is improved, contrary to the most pertinent prior art. While the quartz cladding diameter is reduced, the optical fiber core is not changed, providing a small perturbation of waveguide channel parameters.

As for the Examiner's assertion that Sumitomo provides an optical fiber with mode field diameters about 8 micrometers, the Applicant contends that a comparison of the abstract of Sumitomo EP 0 851 247 A2 with claims 1 and 10 indicates that there might be a misprint in Sumitomo. Claims 1 and 10 provide the dimensions of between 25 and 50 micrometers.

Since the Examiner's objections and claim rejections have been traversed, the Applicant respectfully submits that amended claims 1-8 and new claims 9-16 are submitted to be in condition for allowance.

Respectfully submitted,

Dated: January 6, 2006

  
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